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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tsuyoshi Isomura

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WENDEROTH, LIND & PONACK L.L.P.

1030 15th Street, N.W.

Suite 400 East

Washington, DC 20005-1503

EXAMINER

DUBASKY, GIGIL

ART UNIT

PAPER NUMBER

2421

NOTIFICATION DATE

DELIVERY MODE

02/02/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com

coa@wenderoth.com

Office Action Summary	Application No. 10/588,543	Applicant(s) ISOMURA ET AL.	
	Examiner GIGI L. DUBASKY	Art Unit 2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-22 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-22 and 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/23/2010 has been entered.

Response to Arguments

Claims 1-14 and 23 had been cancelled previously.

Claim 29 has been newly added.

Claims 15-22 and 24-29 are pending.

2. Applicant's arguments in the Remarks filed on 09/23/2010 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito Noburo et al (JP 2002-232809 A) (herein Noburo) which was provided in the IDS and is enclosed its English translation version in this action.

Regarding claim 15, Noburo discloses a broadcast receiving apparatus (Figures 1-4), comprising:

a receiver (demodulator 1 as “a receiver”) which receives a first TV broadcast signal and a second TV broadcast signal each of the first TV broadcast signal and the second TV broadcast signal including video data for reproducing an image (¶ [0006] for the demodulator 1 receives the digital TV broadcast including a first (S1) and second (S2) image stream data), wherein an image to be reproduced from the first TV broadcast signal is of higher quality than an image to be reproduced from the second TV broadcast signal (¶ [0008] for the first picture signal I1 reproduced from the S1 is characterized by being higher resolution than the second picture signal I2 reproduced from the S2);

a first decoder (decoder 21 as “a first decoder”) which decodes the first TV broadcast signal received by said receiver (¶ [0006] and ¶ [0014] for decoding

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the first image stream data S1 to output the picture signal I1 by decoder 21);

a second decoder (decoder 22 as “a second decoder”) which decodes the second TV broadcast signal received by said receiver (¶ [0006] and ¶ [0014] for decoding the second image stream data S2 to output the picture signal I2 by decoder 22);

a detector (sensing device 3 as “a detector”) which detects a decoding error part of the first TV broadcast signal decoded by said first decoder (¶ [0006] and ¶ [0015] for detecting position of a decoding error part of picture signal I1 decoded by the first decoder 21); and

a synthesizer (synthesizer unit 5) which generates a composite signal obtained by replacing the decoding error part, which is an abnormal received data region, of the first TV broadcast signal detected by the detector with a corresponding part of the second TV broadcast signal decoded by said second decoder and by using normal received data regions of the first TV broadcast signal as decoded by said first decoder without the decoding error part of the first TV broadcast signal (¶ [0006] and ¶ [0015]-[0016] for the synthesizer unit 5 forms a synthetic picture signal Ic from the amendment picture signal Ia, which is obtained by extracting the second picture signal I2 decoded by the decoder 22 at the position corresponding to the position of error of the first picture signal I1 detected by the sensing device 3 to replace the error part of the first picture signal I1, and the first picture signal I1 including only normal parts (or without detected error part) decoded by the decoder 21; and ¶ [0011] and ¶ [0014] for detected error of abnormal conditions),

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wherein the first TV broadcast signal and the second TV broadcast signal are each a digital TV broadcast signal, and the first TV broadcast signal has a content identical to a content of the second TV broadcast signal and provides video data of a quality higher than a quality of the second TV broadcast signal (see Claim 4 of Noburo).

Regarding claim 16, Noburo discloses the apparatus as discussed in the rejection of claim 15. Noburo further discloses at least one of said first decoder and said second decoder decodes the TV broadcast signal with use of the composite signal generated by said synthesizer (see Figure 1 for the picture signal Ic generated by the synthesizer unit 5 is a composite signal of the first picture signal I1 decoded by the first decoder 21 and the amendment picture signal Ia decoded by the second decoder 22).

Regarding claim 17, Noburo discloses the apparatus as discussed in the rejection of claim 15. Noburo further discloses the first decoder (decoder 21) and said detector (sensing device 3) constitute a decoding and detecting unit which decodes the first TV broadcast signal and detects the decoding error part of the first TV broadcast signal during decoding of the first TV broadcast signal to output a detection result to said synthesizer (§ [0006], § [0015] and see Claim 1 for the sensing device 3 detects the error part of the first picture signal I1 decoded by the decoder 21 and output the error position to the extracting apparatus 4 compounded in the synthesizer unit 5).

Regarding claim 24, Noburo discloses the apparatus as discussed in the rejection of claim 15. Noburo further discloses the second TV broadcast signal is a broadcast signal for use in broadcasting under rainfall for the first TV broadcast signal (¶ [0011]).

Regarding claim 26 and claim 28, all the limitations of claims 26 and 28 are analyzed corresponding to all functionalities of claim 15. Claims 26 and 28 are rejected under the same ground as claim 15.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Noburo et al (JP 2002-232809 A) in view of Boyce et al (US 2006/0126733).

Regarding claim 18, Noburo discloses the apparatus as discussed in the rejection of claim 15. Noburo further discloses the synthesizer reads out the decoded first TV broadcast signal and the decoded second TV broadcast signal,

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and generates the composite signal obtained by replacing the decoding error part of the first TV broadcast signal detected by the detector with the corresponding part of the second TV broadcast signal (§ [0006] and § [0015]-[0016] for the synthesizer unit 5 forms a synthetic picture signal Ic from the decoded first picture signal I1 the amendment picture signal Ia, which is obtained by extracting the second picture signal I2 decoded by the decoder 22 at the position corresponding to the position of error of the first picture signal I1 detected by the sensing device 3 to replace the error part of the first picture signal I1, and the first picture signal I1 including only normal parts (or without detected error part) decoded by the decoder 21).

Noburo fails to disclose a first storage device which stores the first signal decoded by said first decoder and a second storage device which stores the second signal decoded by said second decoder.

Boyce discloses a robust mode staggercasting communication system (title) which comprises a receiver (Figure 6) to receive a time domain multiplexed signal representing the same content and including two encoded signals in two different modes (i.e., normal mode and robust mode) (§ [0031]) with one having higher quality than the other (§ [0059] and § [0087]). Boyce discloses the receiver includes a first storage device which stores the first signal decoded by said first decoder and a second storage device which stores the second signal decoded by said second decoder (in Figure 6, element 250' for storing the normal mode signal decoded by decoder 240' and element 250" for storing the robust mode signal decoded by decoder 240").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Noburo's receiver to include a first and a second storage devices to store the signals decoded from the first decoder and the second decoder respectively as taught by Boyce, so to provide an enhanced system which enables to perform switching between the first and the second picture signals on a picture-by-picture basis by utilizing the frame storage for each signal (taught by Boyce; ¶ [0071]).

Regarding claim 29, Noburo discloses the apparatus as discussed in the rejection of claim 15. Noburo further discloses a resolution of the first TV broadcast signal decoded by said first decoder is different from a resolution of the second TV broadcast signal decoded by said second decoder (¶ [0008] for the first picture signal I1 reproduced from the S1 decoded by the first decoder 21 is characterized by being higher resolution than the second picture signal I2 reproduced from the S2 decoded by the second decoder 22).

Noburo does not explicitly disclose the synthesizer implements data expansion or contraction depending on a resolution ratio of the resolution of the first TV broadcast signal and the resolution of the second TV broadcast signal.

Boyce discloses a robust mode staggercasting communication system (title) which comprises a receiver (Figure 6) to receive a time domain multiplexed signal representing the same content and including two encoded signals in two different modes (i.e., normal mode and robust mode) (¶ [0031]) with one having higher quality than the other (¶ [0059] and ¶ [0087]), wherein the encoding

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processes are performed using predetermined parameters including resolution, frame rate, quantization level, etc. (¶ [0028] lines 15-18). Boyce also discloses when a spatial resolution, frame rate, etc. of the first TV broadcast signal decoded by said first decoder is different from those of the second TV broadcast signal decoded by said second decoder, the selector (as the "synthesizer") performs the switching from decoding a normal mode video packet stream to a robust mode packet stream and vice versa is performed by gradually changing the image characteristics (i.e., resolution, frame rate, etc.) of the resulting video signal between two modes (¶ [0059]-[0062]). It means that Boyce discloses the synthesizer implements data expansion or contraction depending on a resolution ratio of the resolution of the first TV broadcast signal and the resolution of the second TV broadcast signal when the resolution of two signals is different.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Noburo's system with the teaching of Boyce, so to minimize the objectionable video artifacts resulting from the switch between two video signal with different resolution characteristics.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Noburo et al (JP 2002-232809 A) in view of Karaoguz et al (US 2005/0066089) of the record.

Regarding claim 19, Noburo discloses the apparatus as discussed in the rejection of claim 15. Noburo further discloses the first and the second decoders (decoders 21 and 22 in Figure 1).

Noburo fails to disclose a timesharing unit which timeshares the first TV broadcast signal and the second TV broadcast signal received by said receiver for outputting, wherein a single decoder which alternately decodes the first TV broadcast signal and the second TV broadcast signal timeshared by said timesharing unit.

Karaoguz discloses a timesharing unit which timeshares the first TV broadcast signal and the second TV broadcast signal received by the receiver for outputting, and alternately decodes the first TV broadcast signal and the second TV broadcast signal timeshared by the timesharing unit ("decoder core 242" in Figure 2 includes a timeshared decoding processor; ¶ [0051]).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the receiver of Noburo with the teaching of Karaoguz's decoder core module, so to reduce the space of circuitry and the cost of manufacture.

8. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Noburo et al (JP 2002-232809 A) in view of Karaoguz et al (US 2005/0066089) of the record and further in view of Shikakura et al (US 6108379) of the record.

Regarding claim 20, Noburo in view of Karaoguz discloses the apparatus as discussed in the rejection of claim 19. In the second embodiment of Noburo discloses the receiver also includes a filter 6 between the synthesizer unit 5 and the display device 9 (Figure 2).

However, the combined system of Noburo and Karaoguz does not explicitly disclose a first storage device which stores the composite signal outputted from said synthesizer and a second storage device which stores the second TV broadcast signal decoded by the single decoder, wherein said synthesizer stores the second TV broadcast signal decoded by the single decoder in said first storage device if said detector has not detected the decoding error part of the first TV broadcast signal, and reads out the part of the second TV broadcast signal corresponding to the decoding error part from said second storage device to store the readout part in said first storage device if said detector has detected the decoding error part of the first TV broadcast signal.

Shikakura discloses a receiver includes a first storage device which stores the composite signal outputted from the synthesizer (element 303 in Figure 3; Col 7-32); and a second storage device which stores the second TV broadcast signal decoded by the single decoder (element 304 in Figure 3 or element 404 in Figure 5), wherein said synthesizer is configured to store the second TV broadcast signal decoded by the single decoder in said first storage if said detector has not detected the decoding error part of the first TV broadcast signal, and is configured to read out the part of the second TV broadcast signal corresponding to the decoding error part from said second storage device to store the readout part in said first storage device if said detector has detected the decoding error part of the first TV broadcast signal (elements 215 and 211-213 in Figure 7 have all equal functionalities as claimed limitations; Col 8 lines 63-67 and Col 9 lines 1-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the receiver of the combined system of Noburo and Karaoguz to include the teaching of Shikakura, so to provide an enhanced system with the capability of buffering processed frames before providing the frames for display in order to increase to response time when the frames are requested.

Regarding claim 21, Noburo in view of Karaoguz and further in view of Shikakura discloses the apparatus as discussed in the rejection of claim 20. The combined system further discloses the single decoder decodes the first TV broadcast signal with use of the composite signal stored in said first storage device if said detector has detected the decoding error part of the first TV broadcast signal (taught by Shikakura; "decoding apparatus 200" as a single decoder, "elements 211 and/or 212" as detector; Col 5 lines 7-67).

Regarding claim 22, Noburo in view of Karaoguz discloses the apparatus as discussed in the rejection of claim 19. With the same motivation to modify the receiver of the combined system of Noburo and Karaoguz with the teaching of Shikakura as discussed in the rejection of claim 20, the combined system further discloses the single decoder and said detector constitute a decoding and detecting unit which decodes the first TV broadcast signal corresponding to the second TV broadcast signal after decoding the second TV broadcast signal, and detects the decoding error part of the first TV broadcast signal during decoding of

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the first TV broadcast signal to output a detection result to said synthesizer (taught by Shikakura; see Figure 7; “decoding apparatus 200” as single decoder, elements 211 and/or 212 as detector, and element 215 as synthesizer; Col 8 lines 39-67).

9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Noburo et al (JP 2002-232809 A) in view of Shikakura et al (US 6108379) of the record.

Regarding claim 25, Noburo discloses the apparatus as discussed in the rejection of claim 15. Noburo further discloses the first TV broadcast signal and the second TV broadcast signal are each a digital TV broadcast signal (§ [0001]), and the first TV broadcast signal has a content identical to a content of the second TV broadcast signal (see Noburo’s claim 4), and is a signal modulated by a modulation system (§ [0002]).

Noburo does not explicitly disclose the first broadcast signal in modulation system has a viewable receiving C/N ratio higher than a viewable receiving C/N ratio of a modulation system applied to the second broadcast signal.

Shikakura discloses the first broadcast signal in modulation system has a viewable receiving C/N ratio higher than a viewable receiving C/N ratio of a modulation system applied to the second broadcast signal (see curve B and curve C in Figure 8; Col 3 lines 23-51, Col 4 lines 55-67, Col 6 lines 9-16 and Col 7 lines 26-39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Noburo's system with the teaching of Shikakura about modulating the first signal in a viewable receiving C/N ratio higher than the second signal, so to provide a more robust system under the rainfall which not only encodes the first and the second signal of the same content in different resolution but also modulates them in different C/N ratio in order to enhance user viewing experience.

10. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Noburo et al (JP 2002-232809 A).

Regarding claim 27, claim 27 is directed toward embodying the method of claim 26 (detecting means for detecting a decoding error... and synthesizing means for generating a composite signal...) in "a non-transitory computer-readable storage medium". So, all functionalities of claim 27 are rejected under the same rationale as claim 26. It would have been obvious to embody the procedures of Noburo discussed with respect to claim 26 in a "non-transitory computer-readable storage medium" in order that the instructions could be automatically performed by a processor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GIGI L. DUBASKY whose telephone number

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is (571)270-5686. The examiner can normally be reached on Monday through Thursday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN W. MILLER can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GD

/Hunter B. Lonsberry/
Primary Examiner, Art Unit 2421